



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/543,019	12/22/2005	Norishige Kawaguchi	501/43589/Case 102-PCT-US	3950
279 7590 11/26/2008 Trexler, Bushnell, Giangiorgi, Blackstone & Marr, Ltd. 105 West Adams Street Suite 3600 Chicago, IL 60603			EXAMINER COHEN, JODI F	
			ART UNIT 1791	PAPER NUMBER
			MAIL DATE 11/26/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/543,019	Applicant(s) KAWAGUCHI ET AL.	
	Examiner Jodi Cohen	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amimoto et al. '104 (US 5,424,104) and Yamamoto '570 (JP 11-106570) and further in view of Yamamoto et al. '431 (JP 09-059431), (all previously on record).

With respect to claims 1 and 3, '104 discloses a method of manufacturing a polyolefin-polyamide resin composition, comprising melting/kneading, extruding, and drafting (Col 14; lines 49-66) a polyolefin (Col 2; lines 43-46) and a polyamide (Col 2; lines 30-42, 47-55). Furthermore '104 discloses a silane-coupling agent may be incorporated (Col 14; lines 16-20) as well as multiple antioxidants (Col 3; lines 7, Col 13; lines 11-14). '104 specifically states using antioxidants that inherently have a melting point of 70-170 °C such as, 4,4'-thiobis(3-methyl-6-tert-butylphenol), and antioxidants with a melting point of 180-300 °C such as, 4,4'-butylidenebis (3-methyl-6-tert-butylphenol) or 1,1,3-tris(2-methyl-4-hydroxy-5-tert-butyl-phenyl)butane (Col 11; lines 46-68, Col 12; lines 1-68). (See also Examples 6-11) However, '104 does not disclose dispersing the resin in the form of fibers with an average fiber diameter of 1µm or less in the polyolefin and to finish the composition in the form of pellets.

Art Unit: 1791

'570 discloses forming a polyolefin, polyamide resin with a silane-coupling agent dispersed in the form of fibers with an average fiber diameter of 1 μ m or below and rolling to form pellets to form a resin composition with excellent rigidity, strengths and creep resistance and having low density. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to have formed a resin with an average fiber diameter of 1 μ m or less in the polyolefin and finish the composition in pellets because '570 teaches this method forms a resin with improved rigidity and strength (Abstract).

The combined references of '104 and '570 teach all the limitations as discussed above however; they do not teach the polyamide has an amino group in the main chain nor that it has a melting point within 160-265 °C.

'431 discloses a method to produce a fiber-reinforced thermoplastic resin with improved mobility, impact, resistance, rigidity and strengths, wherein the polyamide has an amide group in the main chain and melting point of 135-350 °C. (Abstract) Thus '431 teaches it is known in the art to use polyamide with an amino group in the main chain that has a melting point of 135-350 °C, which falls within 160-265 °C.

With respect to claim 2, the combined teachings of '104, '570 and '431 disclose a method of manufacturing polyolefin-polyamide resin composition, the method comprising;

a first step of mixing a polyolefin, a silane-coupling agent, and a rubbery polymer,

Art Unit: 1791

melt-kneading the polyolefin mixture with a polyamide at a temperature higher than the melting point of the polyamide or the polyolefin and extruding a product, and a final step of drawing and rolling the extruded product at a temperature equal to or lower than the melting point of the polyamide.

The combined teachings of '104, '570 and '431 do not disclose the second step of melt-kneading the polyamide alone before melt-kneading it with the polyolefin mixture above the melting point of the mixture of the first step is not explicitly stated however; it is understood that for the two polymer mixtures to be melt-kneaded they must both be melted. Furthermore '431 disclose keeping the polyamide as well as the polyolefin above their melting point temperatures. It would have been obvious to one of ordinary skill in the art to melt-knead the polyamide and polyolefin at a temperature higher than their respective melting points and to draw or roll the extruded product at a temperature lower than the melting point of the polyamide because '431 teaches this method in order to produce a fiber-reinforced thermoplastic resin with improved mobility, impact resistance and rigidity (Abstract).

Response to Arguments

3. Applicant's arguments filed 08/28/2008 have been fully considered but they are not persuasive.

4. Applicants principal arguments are

a. Amimoto has no disclosure concerning the use of the first antioxidant with a melting point of 70-170 °C, and the second antioxidant with a melting point of

180-300 °C and therefore is not capable of long-time running and of excellent productivity.

b. Further; in Amimoto a phosphorus antioxidant must necessarily be included.

c. Reference of Amimoto teaches an aromatic polyamide with a high melting point which requires temperatures such as 350-300 °C to manufacture the composition and newly amended claim 1 requires a polyamide with a melting point between 160-265 °C which would cause hardly any scorching of the extruder that does not occur in the invention of the present application.

5. In response to applicant's primary and secondary arguments that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., long-time running and of excellent productivity) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993), however because Amimoto does teach the combination of the first antioxidant with a melting point of 70-170 °C, and the second antioxidant with a melting point of 180-300 °C as discussed below, these qualities would be inherent to the resin produced.

Amimoto does not disclose the melting points of each possible antioxidant disclosed, however a melting point of a specific composition is considered inherent to that composition and will not change, therefore Amimoto is not required to list each

Art Unit: 1791

melting point for it to be known and for one to determine if it falls within the ranges listed in claim 1 of the present application.

Amimoto discloses that phosphorous antioxidants, phenolic antioxidants, amine antioxidants, or sulfur antioxidants may be used in making the polyolefin-polyamide resin composition (Col 11; lines 45-58). Therefor it would have been obvious to one of ordinary skill in the art to try any antioxidants that fall within any of the above listed categories because Amimoto teaches they are acceptable for incorporations in resins. Amimoto also discloses that phosphorous antioxidants are preferable because they improve the impact strength of the molded articles made from the resin and therefore Amimoto discloses a phosphorous antioxidant in the preferred embodiment. However; it would still have been obvious to one of ordinary skill in the art at the time of the invention to try any of the disclosed antioxidants. Regardless, Amimoto does disclose phosphorous antioxidants with melting points of 70-170 °C such as bis (2,4-di-tert-butylphenyl)-pentaerythritol diphosphite, 9,10-dihydro-9-oxa-10-phosphophenanthrene-10-oxide, and tris(2,4-di-tert-butylphenyl)phosphite etc.

6. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., hardly any scorching of the extruder) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the

Art Unit: 1791

specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Additionally applicant should note that '104, '570 and '431 all teach methods of making thermoplastic resin compositions comprising melting and kneading a polyolefin and polyamide mixture simple substitution of one polyamide for another to yield predictable results where limitations of each polyamide is previously disclosed in the art, as discussed above, does not provide patentability. See MPEP 2141

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jodi Cohen whose telephone number is 571-270-3966. The examiner can normally be reached on Monday-Friday 7:00am-5:00pm Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jodi F. Cohen/
Examiner, Art Unit 1791
/ Carlos Lopez/
Primary Examiner, Art Unit 1791